

REMARKS

The office action dated July 10, 2007 has been received and noted. Claims 1-22 were examined. Claims 1-22 were rejected. Claims 1-18, 20-22 are amended to correct minor grammatical structure and/or sentence structure. As such, no new matter has been added. Claim 19 is cancelled. Claims 1-18, 20-22 remain in the Application. Reconsideration of the pending claims is requested in view of the above amendments and following remarks.

I. Claim Rejected Under 35 U.S.C. § 112

Claim 19 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter with applicant regards as the invention. Claim 19 is cancelled rendering this rejection moot.

II. Claims Rejected Under 35 U.S.C. § 102

Claims 1-9, 12-13, 15 and 21-22 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Publication No. 2002/0228564 to Motoki et al. ("Motoki"). A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. MPEP § 2131. Applicants respectfully submit that each and every element, either expressly or inherently, in independent claim 1 and its respective dependent claims is not set forth in the cited references.

Independent claim 1 recites:

A process for making a film of gallium nitride (GaN) starting from a substrate, by depositing GaN by vapour phase epitaxy, characterised in that the GaN deposit comprises at least one vapour phase epitaxial lateral overgrowth (ELO) step, and in that at least one of these ELO steps is preceded by etching of openings:

- either in a previously deposited dielectric mask,
- or directly in the substrate,

and *in that an asymmetry is introduced into the dislocations environment* during one of the ELO steps so as to cause the largest possible number of dislocation curvatures, since curved dislocations do not emerge at the surface of the GaN layer thus obtained.

(App., claim 1.) Representatively, in one embodiment, the Application states that “asymmetry . . . may be induced . . . by varying growth parameters either by applying an electric field perpendicular to the growth axis, or by illuminating using a lamp producing UV radiation at about 170 to 400 nm, to cause preferential growth of a single family of facets {11-22}.” (App., pp.10-11, lns. 28-32. 1-2.) Applicants are unable to discern any part of *Motoki* which discloses an application of an electric field, a magnetic field, or UV radiation perpendicularly to the growth direction to effectuate asymmetry in the dislocations environment. Therefore, *Motoki* is at least deficient with respect to this limitation. Additionally and representatively, in another embodiment, the Application states that “asymmetry is introduced by making openings . . . that are *adjacent, unequal and asymmetric* forming a basic pattern of a periodic network.” (App., p.11, lns. 15-18; FIGs. 9,11.) By contrast, *Motoki* discloses that, in an epitaxial lateral overgrowth process, “[m]any small windows 12 are *regularly* distributed crosswise and lengthwise on the mask 11” (*Motoki*, ¶ [0025].) As a result, “[e]very three nearest neighbors form an *equilateral triangle* of a side of L.” (*Id.*) Thus, according to *Motoki*, windows 12 have the same shape and the same width. (*Motoki*, FIGs. 2, 4.) Moreover, even if the shape of windows 12 varies, e.g., “round windows, striped windows or other polygon windows” (*Motoki*, ¶ [0025]), this shape is the same for all windows distributed across mask 11. (*Motoki*, FIG. 2, 3.)

The Examiner cites paragraph [0318] and Figures 2 and 3 of *Motoki* to support the argument that “Motoki discloses an asymmetry induced by making unequal openings with unequal geometry in the dielectric mask.” (Office Action, p.3.) However, a careful review of *Motoki* reveals that, even though *Motoki* discloses different shapes for windows 12, i.e., “[s]trip-shaped, dot-shaped or other shaped” (*Motoki*, ¶ [0318]), these windows are “regularly aligned” and merely “replace” earlier-described *symmetrical* configurations disclosed in *Motoki*. (See, e.g., *Motoki*, ¶ [0025].) Thus, *Motoki* does not disclose each and every limitation of independent claim 1, namely, “in that an asymmetry is introduced into the dislocations environment.”

Accordingly, Applicants respectfully submit that independent claim 1 and its respective dependent claims are allowable over the cited reference.

II. Claims Rejected Under 35 U.S.C. § 103

A. Claims Rejected as Unpatentable over Motoki in view of Okuyama

Claims 10-11 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Motoki* in view of U.S. Patent Publication No. 2002/0117677 to Okuyama et al. (“*Okuyama*”). Applicants respectfully submit that claims 10 and 11 are not obvious over the cited references. *Motoki* does not disclose each and every limitation of independent claim 1 for the reasons set forth in section II of this Response. One of ordinary skill in the art would not look to *Okuyama* to cure this deficiency because the Examiner has not relied upon and Applicants are unable to discern any part of *Okuyama* that teaches or suggests each and every limitation of independent claim 1, namely, “in that an asymmetry is introduced into the dislocations environment.” Dependent claims 10 and 11 depend on independent claim 1 and therefore include all of the limitations thereof. Accordingly, Applicants respectfully submit that dependent claims 10 and 11 are allowable over the cited references.

B. Claims Rejected as Unpatentable over Motoki in view of Beaumont

Claims 14 and 16-17 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Motoki* in view of U.S. Patent No. 6,802,902 to Beaumont et al. (“*Beaumont*”). Applicants respectfully submit that claims 14 and 16-17 are not obvious over the cited references. *Motoki* does not disclose each and every limitation of independent claim 1 for the reasons set forth in section II of this Response. One of ordinary skill in the art would not look to *Beaumont* to cure this deficiency because the Examiner has not relied upon and Applicants are unable to discern any part of *Beaumont* that teaches or suggests each and every limitation of independent claim 1, namely, “in that an asymmetry is introduced into the dislocations environment.” Dependent claims 14 and 16-17 depend on independent claim 1 and therefore include all of the limitations thereof. Accordingly, Applicants respectfully submit that dependent claims 14 and 16-17 are allowable over the cited references.

C. Claims Rejected as Unpatentable over Motoki

Claims 18-20 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Motoki*. Applicants respectfully submit that claims 18 and 20 are not obvious over the cited references. *Motoki* does not disclose each and every limitation of independent claim 1 for the reasons set forth in section II of this Response. Dependent claims 18 and 20 depend on independent claim 1 and therefore, in addition to including all of the limitations thereof, merely narrow the scope of independent claim 1. Thus, in view of that *Motoki* does not anticipate or make obvious independent claim 1, *Motoki* cannot make obvious dependent claims 18 and 20. Accordingly, Applicants respectfully submit that dependent claims 18 and 20 are allowable over the cited reference.

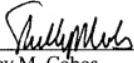
CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 1-18 and 20-22, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 500-4787.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office on November 13, 2007.


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